

# **ANNUAL REPORT**

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**COMMANDANT**

THE

**ARMY SERVICE SCHOOLS**

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**SCHOOL YEAR ENDING**

**AUGUST 31, 1911**

ARMY SERVICE SCHOOLS PRESS  
FORT LEAVENWORTH, KANSAS

1911



## THE ARMY SERVICE SCHOOLS

FORT LEAVENWORTH, KANSAS

August 31, 1911.

THE ADJUTANT GENERAL, U. S. ARMY,  
*Washington, D. C.*

SIR:

I have the honor to submit the following report of the operations and administration of The Army Service Schools for the year ending August 15, 1911:

The following is a list of officers who, during the period covered by this report, have been on duty at The Army Service Schools as commandant, assistant commandants, staff, instructors, and assistant instructors, The Army School of the Line, The Army Signal School, The Army Staff College, The Army Field Engineer School, and The Army Field Service and Correspondence School for Medical Officers:

### COMMANDANT

**Brigadier** General **Frederick** Funston, U. S. Army, to January 15, 1911.

**Brigadier** General R. D. Potts, U. S. Army, January 16, 1911, to date.

### PERSONAL STAFF

First Lieutenant Douglas Potts, 18th Infantry, January 16, 1911, to date.

### ASSISTANT COMMANDANTS

Lieutenant Colonel J. F. Morrison, Infantry, The Army School of the Line and The Army Staff College.

Major Edgar Russel, Signal Corps, The Army Signal School.

Lieutenant Colonel J. E. Kuhn, Corps of Engineers, The Army Field Engineer School.

Major E. L. Munson, Medical Corps, The Army Field Service and Correspondence School for Medical Officers.

SECRETARY

Captain A. E. Saxton, 8th Cavalry.

LIBRARIAN

Lieutenant Colonel Ezra B. Fuller, U. S. Army, retired.

DEPARTMENT OF MILITARY ART

---

*Senior Instructor*

Lieutenant Colonel J. F. Morrison, Infantry.

*Instructors*

Major Farrand Sayre, Quartermaster% Department.

Major Stephen H. Elliott, 12th Cavalry,

Major D. E. Aultman, 1st Field Artillery.

Captain T. O. Murphy, 19th Infantry.

Captain LeRoy Eltinge, 15th Cavalry.

Captain George F. Baltzell, 5th Infantry.

Captain Stuart Heintzelman, 6th Cavalry.

Captain Roger S. Fitch, 2d Cavalry.

Veterinarian G. E. Griffin, 3d Field Artillery.

DEPARTMENT OF ENGINEERING

---

*Senior Instructor*

Captain J. A. Woodruff, Corps of Engineers, to November 12, 1910.

Major E. R. Stuart, Corps of Engineers, December 31, 1910, to February 28, 1911.

Lieutenant-Colonel J. E. Kuhn, Corps of Engineers, February 28, 1911, to date.

*Instructors*

Major E. R. Stuart, Corps of Engineers, March 1, 1911, to date.

Captain Clarence O. Sherrill, Corps of Engineers, to January 1, 1911.

First Lieutenant R. E. Beebe, 14th Infantry.

First Lieutenant E. K. Masee, Infantry, attached as instructor temporarily from April 21, 1911, to June 18, 1911.

DEPARTMENT OF LAW

---

*Senior Instructor*

Captain H. A. Smith, Infantry.

*Instructors*

Captain Tenney Ross, 3d Infantry.  
Captain Willey Howell, 6th Infantry.  
First Lieutenant E. K. Masee, Infantry,

DEPARTMENT OF LANGUAGES

---

*Senior Instructor*

Major T. G. Hanson, Infantry.

*Instructors*

Major D. E. Aultman, 1st Field Artillery,  
Captain William Kelly, jr., 9th Cavalry,  
Captain C. F. Martin, 3d Cavalry.  
First Lieutenant Walter Krueger, Infantry.

DEPARTMENT CARE OF TROOPS

---

*Senior Instructor*

Major E. L. Munson, Medical Corps.

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THE ARMY SIGNAL SCHOOL

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DEPARTMENT OF FIELD SIGNALING

---

*Senior Instructor*

Major Edgar Russel, Signal Corps.

*Instructors*

Captain G. E. Mitchell, Signal Corps.  
First Lieutenant J. O. Mauborgne, 3d Infantry.

DEPARTMENT OF TOPOGRAPHY

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*Instructor*

First Lieutenant E. K. Masee, Infantry.

DEPARTMENT OF LANGUAGES

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*Senior Instructor*

Major T. J. Hanson, Infantry.

The following named members of the staff of the schools were relieved during the year:

My predecessor, Brigadier General Frederick Funston, January 15, 1911, per War Department orders, in order to proceed to command Department of Luzon, P. I.

Captain T. O. Murphy, Captain G. F. Baltzell, Captain R. S. Fitch, instructors Department of Military Art, were relieved on account of expiration of detail.

Captain J. A. Woodruff and Captain C. O. Sherrill, Department of Engineering, on November 12, 1910, and January 1, 1911, respectively, expiration of detail.

Captain Tenney Ross, and Captain Willey Howell, Department of Law, on August 14, 1911, expiration of detail.

Major D. E. Aultman, Departments of Languages and Military Art, on August 14, 1911, expiration of detail.

The following constituted the Staff Class for the year, all of them, with the exception of Captain F. A. Barton, who was relieved at his own request on account of sickness, and Captain F. M. Savage, completing the course and graduating:

A special report has already been submitted in the case of Captain Savage.

Captain Laurance Angel, P. R. Regt. Infantry.  
Captain F. A. Barton, 3d Cavalry.  
Captain L. T. Hoiseau, 6th Field Artillery.  
Captain J. H. Bradford, Jr., 19th Infantry.  
Captain C. C. Clark, 27th Infantry.  
Captain E. T. Collins, 6th Infantry.  
Captain Oliver Edwards, 5th Infantry.  
Captain H. B. Fiske, 28th Infantry.  
Captain Laurence Halstead, 6th Infantry.  
Captain S. M. Kochersperger, 2d Cavalry.  
Captain E. M. Leary, 11th Cavalry.  
Major J. W. McAndrew, 8th Infantry.  
Captain Robert McCleave, 2d Infantry.  
Captain Americus Mitchell, 5th Infantry.  
Captain G. S. Norvell, 8th Cavalry.  
Captain E. D. Peek, Corps of Engineers.  
Captain P. E. Pierce, 13th Infantry.  
Captain F. M. Savage, 15th Infantry.  
Captain H. L. Threlkeld, 30th Infantry.  
Captain W. E. Welsh, 30th Infantry.  
Captain H. D. Wise, 9th Infantry.

The following-named officers constituted the Line Class at the beginning of the school year:

Captain G. E. Bali, 16th Infantry.  
Captain J. E. Bell, 2d Infantry.  
Captain M. O. Bigelow, 8th Cavalry.  
Captain H. G. Bishop, 3d Field Artillery.  
Captain T. L. Brewer, 23d Infantry.  
Captain W. B. Burt, 20th Infantry.  
Captain W. B. Carr, 6th Field Artillery.  
Captain C. R. Day, 5th Cavalry.  
Captain S. McC. Decker, P. R. Regt. Infantry.  
Captain H. A. Drum, 23d Infantry.  
Captain O. S. Eskridge, 11th Infantry.  
Captain C. W. Exton, 20th Infantry.  
Captain J. L. Gilbreth, 27th Infantry.  
Major E. B. Gose, 25th Infantry.  
Captain W. F. Grote, 18th Infantry.  
Captain E. E. Haskell, 22d Infantry.  
Captain H. S. Hawkins, 4th Cavalry.  
Major T. N. Horn, 2d Field Artillery.  
Major W. O. Johnson, 8th Infantry.  
Captain A. R. Kerwin, 13th Infantry.  
Major J. F. Kreps, 22d Infantry.  
Captain A. G. Lott, 6th Cavalry.  
Captain J. F. McKinley, 11th Cavalry.  
Captain R. O. Mason, 5th Field Artillery.  
Captain H. W. Miller, 13th Infantry.  
Captain G. W. Moses, 15th Cavalry.  
Captain H. L. Newbold, 4th Field Artillery.  
Captain G. W. Stuart, 25th Infantry.  
Captain R. O. VanHorn, 17th Infantry.  
Captain H. S. Wagner, 14th Infantry.

Captain C. W. Weeks, 28th Infantry.  
Captain H. C. Whitehead, 10th Cavalry.  
Captain H. O. Williard, 5th Cavalry.  
Captain W. S. Woodruff, P.R. Regt. Infantry,

Of these Captain H. W. Miller, was relieved at his own request on account of sickness, January 27, 1911.

The remainder of the class graduated, as follows:

#### HONOR GRADUATES

Captain W. B. Burtt, 20th Infantry.  
Captain C. W. Weeks, 28th Infantry.  
Captain H. A. Drum, 23d Infantry.  
Major T. N. Horn, 2d Field Artillery.  
Captain J. E. Bell, 2d Infantry.

#### DISTINGUISHED GRADUATES

Captain H. G. Bishop, 3d Field Artillery.  
Captain C. R. Day, 5th Cavalry.  
Captain O. S. Eskridge, 11th Infantry.  
Captain C. W. Exton, 20th Infantry,  
Captain J. L. Gilbreth, 27th Infantry.  
Major E. B. Gose, 25th Infantry.  
Captain E. E. Haskell, 22d Infantry.  
Captain H. S. Hawkins, 4th Cavalry.  
Major W. O. Johnson, 8th Infantry.  
Captain A. G. Lott, 6th Cavalry.  
Captain G. W. Moses, 15th Cavalry.  
Captain H. L. Newbold, 4th Field Artillery.  
Captain G. W. Stuart, 25th Infantry.  
Captain R. O. Van Horn, 17th Infantry.  
Captain H. C. Whitehead, 10th Cavalry.  
Captain W. S. Woodruff, P. R. Regiment Infantry,

#### GRADUATES

Captain G. E. Ball, 16th Infantry.  
Captain M. O. Bigelow, 8th Cavalry.  
Captain T. L. Brewer, 23d Infantry.  
Captain W. F. Grote, 18th Infantry.  
Captain A. R. Kerwin, 13th Infantry,  
Major J. F. Kreps, 22d Infantry.  
Captain J. F. McKinley, 11th Cavalry.  
Captain R. O. Mason, 5th Field Artillery.  
Captain H. S. Wagner, 14th Infantry.  
Captain H. O. Williard, 5th Cavalry.

A special report in the case of Captain S. McC. Decker, P. R. Regiment Infantry, has already been submitted.

The following officers were recommended for and detailed to enter the Staff College for 1911-12:

Captain J. E. Bell, 2d Infantry.  
Captain H. G. Bishop, 3d Field Artillery.  
Captain W. B. Burtt, 20th Infantry.  
Captain W. B. Carr, 6th Field Artillery.  
Captain C. R. Day, 5th Cavalry.  
Captain H. A. Drum, 23d Infantry.  
Captain O. S. Eskridge, 11th Infantry.  
Captain C. W. Exton, 20th Infantry.  
Captain J. L. Gilbreth, 27th Infantry.  
Major E. B. Gose, 25th Infantry.  
Captain E. E. Haskell, 22d Infantry.  
Captain H. S. Hawkins, 4th Cavalry.  
Major T. N. Horn, 2d Field Artillery.  
Major W. O. Johnson, 8th Infantry.  
Captain A. G. Lott, 6th Cavalry.  
Captain G. W. Moses, 15th Cavalry.  
Captain H. L. Newbold, 4th Field Artillery.  
Captain G. W. Stuart, 25th Infantry.  
Captain R. O. Van Horn, 17th Infantry.  
Captain C. W. Weeks, 28th Infantry.  
Captain H. C. Whitehead, 10th Cavalry,  
Captain W. S. Woodruff, P. R. Regiment Infantry.

In addition to the above Captains F. A. Barton and L. T. Richardson, graduates of the Line Class of 1910 and 1909, respectively, upon the recommendation of the Academic Board and Commandant, have been detailed by the War Department as members of the Staff Class of 1911-12.

The following officers constituted the class at the Army Signal School, all of them, with the exception of Captain G. S. Gibbs, Signal Corps, who was relieved by War Department orders March 9, 1911, for duty with Company D, Signal Corps, at Maneuver Division, completing the course and graduating:

First Lieutenant W. S. Barriger, (Cav.) Signal Corps.  
Captain C. DeF. Chandler, Signal Corps.  
First Lieutenant I. F. Fravel, 24th Infantry.  
Captain G. S. Gibbs, Signal Corps.  
First Lieutenant G. R. Guild, (Inf.) Signal Corps.  
Captain H. A. Hanigan, 22d Infantry.  
Captain J. F. Janda, 1st Infantry.  
Captain James Justice, 22d Infantry.  
Captain H. B. Kirtland, Signal Corps., Ohio N. G.  
First Lieutenant Clark Lynn, (Inf.) Signal Corps.

Captain W. N. Michel, (F.A.) Signal Corps.  
First Lieutenant L. J. Mygatt, 5th Infantry.  
First Lieutenant O. P. Robinson, (Inf.) Signal Corps.

The Signal Class was graduated on June 5, 1911, at request of Chief Signal Officer of the Army, in order that officers of Signal Corps could be available for other duties.

Captain John W. Barker, 3d Infantry, pursuant to War Department orders pursued a special course in the Army Signal School, being relieved from that detail by War Department orders May 22, 1911.

Lieutenants A. B. Barber and T. H. Emerson, Corps of Engineers, constituted the class in the Army Field Engineer School. Both were recommended for the Staff Class of this year under the provisions of paragraph 48c General Orders 69, War Department, 1910.

Besides the above named regular classes there was also detailed a special class of field officers who took a course especially prepared for them beginning January 9, 1911, and ending March 22, 1911.

The following-named officers constituted this special class :

Colonel F. H. French, Infantry.  
Colonel R. L. Bullard, Infantry.  
Lieutenant Colonel H. C. Davis, Coast Artillery Corps.  
Lieutenant Colonel J. S. Mallory, Infantry.  
Lieutenant Colonel J. A. Gaston, Cavalry.  
Lieutenant Colonel R. M. Blatchford, Infantry.  
Lieutenant Colonel W. T. May, Infantry.  
Lieutenant Colonel T. W. Griffith, 28th Infantry.  
Lieutenant Colonel A. C. Macomb, 9th Cavalry.  
Lieutenant Colonel L. G. Berry, 4th Field Artillery.  
Major Alfred Hasbrouck, 14th Infantry.  
Major J. B. McDonald, 15th Cavalry.  
Major R. H. Noble, 12th Infantry.  
Major M. L. Walker, Corps of Engineers.  
Major F. E. Harris, Coast Artillery Corps.  
Major G. B. Duncan, 2d Infantry.  
Major R. D. Walsh, 11th Cavalry.  
Lieutenant Colonel C. G. Long, U. S. Marine Corps.  
Major J. T. Myers, U. S. Marine Corps.

No marks, certificates, or diplomas were given to these *officers*. Their work was excellent and it is believed the practice of detailing a small class of field officers should be continued each year, at least for several years to come. For the present school year the situation is complicated by the fact that there will be absolutely no quarters available for assignment to a special class. At the present date quarters are assigned to the last room and there is no prospect of vacancies in the future. The city of Leavenworth cannot provide quarters for a class of any size; the three colonels constituting the Infantry Examining Board have, with great difficulty, found quarters at all and in two cases only from unusual conditions not likely to arise again. The transient population of Leavenworth is so small that little or no provision is made in the way of houses or apartments to rent.

Attention is invited to the report of the Secretary, -appended, it is approved and the remarks as to the services of the civil service and Detachment personnel concurred in. I take pleasure in commending them for much hard work well done and for zeal and efficiency in its performance. Their continued services are regarded as essential to the well being and efficiency of the schools in many important duties.

The report of the Secretary conveys but a limited idea of the great responsibilities and endless work of the office. Captain Saxton is commended for the ability and efficiency with which he has performed the exacting and varied duties that mean so much for harmony and good will of all connected with the schools.

The report of the Librarian sets forth in detail the conditions as to the library and is concurred in. This great and valuable collection of professional

literature is now in better shape and more accessible than ever before—it is the result of much hard and intelligent work on the part of the Librarian and his assistants. The Assistant Librarian, Master Signal Electrician Bell, is commended not only for routine work well done but highly important and voluntary services in translating valuable articles from the German for use of instructors and student officers.

Attention is invited to the appended reports of the Assistant Commandants and Senior Instructors. They cover the ground so fully that I have nothing to add to them. They meet with my full concurrence and approval.

While these reports show very fully what has been done during the past year they only indicate inferentially the vast amount of exacting and intelligent work on their part by means of which the schools have been brought to their present high state of efficiency. I wish to express my appreciation of their services as a body. Their loyalty to the Commandant and untiring zeal, ability and efficiency in the performance of their many and exacting duties have, collectively, made this great military college an institution that the army and country at large can well afford to be proud of.

During the past year the following additions have been made to the College building: An additional wing for use of The Army Field Engineer School and the front of the building has been completed, giving it a much more finished and attractive appearance. The rooms heretofore occupied by the Engineer School have supplied much needed space for other departments and the special schools for which, until now, there was no adequate provision.

A special class of officers was also detailed to report May 20, 1911, to August 15, 1911, for special in-

struction in preparing for detail on militia duty. This class was composed as follows:

Captain L. C. Andrews, 15th Cavalry.  
Captain I. C. Jenks, 24th Infantry.  
Captain F. C. Marshall, 15th Cavalry.  
Captain H. B. Nelson, 24th Infantry.  
Captain E. B. Winans, 4th Cavalry.  
First Lieutenant Edwin Butcher, 15th Infantry.  
First Lieutenant C. H. Danforth, 17th Infantry.  
First Lieutenant F. F. Jewett, 1st Infantry.  
First Lieutenant C. R. Lewis, 10th Infantry.  
First Lieutenant F. J. Moran, 22d Infantry.  
First Lieutenant C. H. Morrow, 18th Infantry,  
First Lieutenant W. E. Persons, 1st Infantry.  
First Lieutenant E. Z. Steever, 3d, 28th Infantry,  
First Lieutenant E. K. Sterling, 3d Cavalry.  
First Lieutenant H. C. M. Supplee, 26th Infantry.  
First Lieutenant I. F. Frazel, 24th Infantry  
First Lieutenant Elvid Hunt, 30th Infantry.  
First Lieutenant W. H. Johnson, 8th Infantry.  
First Lieutenant C. R. Thuis, 23d Infantry.  
First Lieutenant C. M. Blackford, 18th Infantry.  
First Lieutenant S. A. Howard, 30th Infantry.  
First Lieutenant G. H. Williams, 28th Infantry.  
First Lieutenant A. G. Goodwyn, 29th Infantry.  
Second Lieutenant A. R. Emery, 27th Infantry.  
Second Lieutenant F. C. Test, 22d Infantry.

Owing to the extreme heat, it is recommended that no classes or school work other than the most pressing routine be required during July and August. The instructors and working office personnel should be permitted to go away on leave or furlough during these months to escape the heated season and to be rested and fresh for the strenuous work with the entering classes.

Owing to the mobilization of the Texas Maneuver Division a class could not be detailed for The Army Field Service and Correspondence School for Medical Officers.

As has been recommended heretofore, a fire-proof library building is a pressing want, not only for the military library itself, which is believed to be the most complete in this country, but to free for other important Work of the Military Art Department that part of the college building now used as a library.

## QUARTERS

As has been mentioned in most of the annual reports ever since the schools were organized, the number of officers' quarters is still far from adequate for the larger and more numerous classes being detailed.

Considering the amount and kind of work done by student officers here it is obvious that they should be provided with suitable quarters., not only as a place in which to live, but affording proper opportunities for the intense application and study required of them. Neither of these conditions obtain at the present time. In order to house the large classes detailed for the current school year it has been unavoidably necessary to unduly crowd officers and utilize bachelor quarters for married officers, in many cases with young children, to the annoyance and inconvenience of both. Under such circumstances officers are at a distinct disadvantage, and the best work cannot be expected of them. The situation calls for immediate consideration and relief.

It is greatly to be regretted that the War Department has not definitely fixed the maximum number of student officers for all classes and provide the necessary accommodations for them. The number of instructors is practically a known quantity, but the number of student officers varies from year to year and has always increased in a much greater ratio than quarters provided; hence there are only two alternatives-reduce the number of officers, which is most undesirable, or provide the proper plant, preferable on all accounts. There was, as I understand, a building program for the school section, looking to the provision of the necessary quarters' and other buildings, approved several years since, but it has been carried out only in part, and a moderate request for additional flat buildings for the

present has been denied for want of funds. I will reiterate that in my opinion the correct solution of this vexed question is to be found in the recommendations made,—fix the number of student officers of all classes, adhere to this fixed number and provide an adequate plant. Only under such conditions can the schools operate to the best advantage and the best work be accomplished.

In conclusion, I cannot speak with too much praise of the conditions found upon assuming command of the schools. Their organization and operation left little to be desired. The assistant commandants, instructors and secretary were thoroughly familiar with their duties and consistently performed them with energy and ability, and, I may add, with the very best results.

The student officers were animated with the proper spirit and worked with commendable zeal and industry. The standards set and the general spirit of all the schools was of a high order, the progress excellent, and the results satisfactory.

Very respectfully,

R. D. POTTS,  
*Brigadier General, U. S. Army,*  
*Commandant.*

THE ARMY SERVICE SCHOOLS  
FORT LEAVENWORTH, KANSAS

August 31, 1911.

THE SECRETARY,  
*The Army Service Schools.*

SIR:

I have the honor to submit the following report pertaining to the office of the Secretary and Disbursing Officer for the fiscal year ending June 30, 1911: , During the period July 1, 1910 to June 30, 1911, the sum of \$16,000.00 was allotted for the support of The Army Service Schools and expended as follows:

Furniture and stationery offices and library, Apparatus and Supplies Department of Engineering, Photograph Department, Drafting Room and Map Making Department .....	\$ 7,916.59
The Library (books and periodicals) .....	1,537.13
Bookbindery .....	487.12
Printing Office .....	1,357.13
Army Signal School .....	372.20
Rental of telephones .....	219.60
Expressage .....	54.50
Transportation of persons and freight .....	55.73
	12,000.00
Not drawn from Treasurer U. S. . . . .	4,000.00
	\$ 16,000.00

The Civil Service and Detachment personnel of employees under my direction have all rendered most arduous and satisfactory service throughout the year. Each man has seemingly made the good interest of the schools his own special interest with splendid results for promptness and efficiency in the dispatch of business.

Such service is deserving of- at least the slight reward of words of commendation where more commensurate reward can not now be made.

Over 1800 officers of the regular army are now

carried on the mailing list. These officers, besides many others not on the mailing list, have secured many military books and maps, by both American and foreign authors, through the Secretary's office.

The Chief Clerk's office, the Book Department; book-bindery, printing office, lithographic and map-making offices, college detachments, college mess, and Fort Leavenworth Laundry have met every demand made upon them in the business spirit of prompt and efficient service.

Very respectfully,

A. E. SAXTON,  
*Captain, 8th Cavalry,*  
*Secretary and Disbursing Officer.*

THE ARMY SERVICE SCHOOLS  
FORT LEAVENWORTH, KANSAS

August 31, 1911

THE SECRETARY,  
*Army Service Schools.*

SIR :

I have the honor to submit the following report regarding the Library of the Army Service Schools for the year ended June 30, 1911:

The total number of volumes on hand in the Library at the close of the fiscal year was 22,122, accounted for as follows:

On hand	June 30, 1910	- - - - -		20,450
Accessions--				
	From Second Section, General Staff	- -	1 5 2	
	Public Documents and Schools Publications	-	108	
	Translations from General Staff, M.I.D.	-	195	
	From Book Bindery, Military Journals	- -	280	
	By purchase	- - - - -	652	
	By donation	- - - - -	285	1,672
Total on hand June 30, 1911				22,122

LIST OF DONORS

Brig. Gen. George S. Anderson, U. S. Army	-	.		46
Adjutant General of Wisconsin	-	-	-	1
U. S. Cavalry Association	-	-	-	9
Chief of Engineers, U. S. Army	-	-	-	1
Major Wm. H. Cruikshank, 1st Field Artillery, U. S. Army	-	-	-	63
Mrs. L. B. Dudley	-	-	-	1
Captain Le R. Eltinge, 15th U. S. Cavalry	-	-	-	2
Captain O. S. Eskridge, 11th U. S. Infantry	-	-	-	1
Mr. Arthur Hooker	-	-	-	1
Kansas State Historical Society	-	-	-	1
Hon. G. H. Knibbs, Melbourne, Australia	-	-	-	1
Captain S. M. Kochersperger, 2d U. S. Cavalry	-	-	-	1
A. C. McClurg & Co., Chicago	-	-	-	1
Captain Harry A. Smith, U. S. Infantry	-	-	-	3
Mr. John F. McGee, Minneapolis, Minn.	-	-	-	1
Polo Association of New York	-	-	-	1
Captain Tenney Ross, 3d U. S. Infantry	-	-	-	1
Captain C. O. Sherrill, Corps Engineers, U. S. Army	-	-	-	12

Mr. Henry Shindler	· · · · ·	136
Captain Wright Smith, 5th Field Artillery, U.S. Army	·	1
Army Signal School	· · · · ·	1
Total	· · · · ·	<u>285</u>

The number of books issued during the year was 3,674. This does not by any means indicate the number of books used by the instructors, student officers and others during the year as a large number are used in the Library by the student officers, especially in the Officers' Study where books on campaigns are kept and which are not allowed to be taken from the room. Also, this does not include such books as are kept permanently in the offices of the several instructors.

The promise of another room for the storage of books seldom used will remove, to a certain extent, the crying need for more space for the use of the Library, but still larger quarters are needed for the proper use of this valuable adjunct of the several schools. However, the cramped quarters occupied by the Library is relatively of small importance compared with that of having a fireproof building for library purposes, as the one now occupied is the very reverse of being even approximately fireproof. It is earnestly urged that this important question may receive the attention that it deserves.

The assistants in the Library are the same as mentioned in my last report, Master Signal Electrician Harry Bell and Squadron Sergeant Major Karl Unthank, and their work has been well and faithfully done. In addition to the routine work of the Library, M. S. E. Bell has done much good work in the line of making German translations for instructors and others at the schools.

Very respectfully,  
EZRA B. FULLER,  
*Lieutenant Colonel, U. S. Army, Retired.*  
*Librarian.*

DEPARTMENT OF MILITARY' ART  
THE ARMY SERVICE SCHOOLS  
FORT LEAVENWORTH, KANSAS

August 31, 1911.

THE SECRETARY,

*The Army Service Schools.*

Sir:

I have the honor to submit the following report for the year ending August 15, 1911:

The instructors in this department for the year were —

Major Farrand Sayre, Quartermaster's Department.  
Major S. H. Elliott, 12th Cavalry.  
Captain T. O. Murphy, 19th Infantry.  
Captain LeR. Eltinge, 15th Cavalry.  
Captain G. F. Baltzell, 5th Infantry.  
Captain Stuart Heintzelman, 6th Cavalry.  
Captain R. S. Fitch, 2d Cavalry.

Of the above instructors Captains Murphy, Baltzell, and Fitch are relieved, having been here four years.

The work of all these officers was earnest, able and efficient and the loss of three of them for next year is much regretted.

Major Edward L. Munson, Medical Corps, Senior Instructor, Care of Troops, The Army Staff College, gave the lectures and instruction in medical organization and care of troops in the Line Class. The work was most efficiently and satisfactorily done.

Major Dwight E. Aultman, Field Artillery, instructor in the Department of Languages, in addition to his regular work conducted the conferences in "Notes on Field Artillery" and gave other assistance to this department. His technical knowledge and willingness to help was of great value and is highly appreciated.

The course in Hippology was conducted by Veterinarian G. E. Griffin, 3d Field Artillery, in a satisfactory manner.

#### **THE ARMY SCHOOL OF THE LINE**

The course in this department for the Line Class was covered in 212 half days. It was practically the same as the year before with the addition of a short course in Troop Leading, and the omission of part of the Maneuvers. The latter was due to the absence from the post of the greater part of the garrison.

Due to a rearrangement of the course in Languages and to 21 half-days transferred from the Departments of Law and Engineering to this department, the work will be extended considerably for the next year.

The number of half. days assigned to the Department of Military Art is increased from 212 to 259.

The course for next year will be much more satisfactory and will enable the department to cover the tactical course now in the Staff Class year during the first year.

In addition to tactical work transferred from the Staff Class to the Line Class, the course in Troop Leading will be doubled, and a short course in Historical Methods and Historical Research is added.

The work of the class this year was very satisfactory.

#### **THE ARMY STAFF COLLEGE**

The course was as outlined in my last report and was successfully carried out. The class as a whole was an excellent one and worked hard.

The allotment of time for next year will give this department 202 half days., a gain of 27.

The course will remain practically the same for the next year as during the last one except that the course in Staff Administration and Supply will be increased by eighteen half days to be devoted to conferences and 9 half days to additional problems in this subject.

As the Staff Class for next year has not had the tactical work to be transferred to the Line Class, both classes will take it next-year, thereafter it will be dropped from the Staff Class course.

A staff ride of seven days was conducted from May 27 to June 2, inclusive. It was the first held here and I believe was entirely successful. This will be repeated next year.

The Historical Ride in July was not held. This was regretted by all.

An effort has been made for the past four years to arrange the work so that in the Staff Class year the work should be a preparation for the higher staff duties and the Line Class year cover the course in the care of troops, their leading in battle and instruction during peace.

The time available in the Line Class year was not sufficient and as this part of the work was of the first importance part of it had to be left for the Staff Class year. By rearranging the work and gaining time from other departments the work is now so arranged. The student officer who enters hereafter in his first year will complete the course as above outlined for the Line Class. He will have less work in the other departments but will have had practically everything taught here, pertaining to a line officer's work.

The Staff Class year will be devoted to duties of the staff, historical research, languages, law and higher work in topography and engineering.

They are all important but it is believed to be

better that the officers who stay but one year devote most of their time to what they can and must use in this everyday work. Those who stay the second year then have the better foundation for the Staff College work.

#### **THE SPECIAL CLASS FOR FIELD OFFICERS**

A special class of field officers, numbering 19, reported January 7 for a course of  $10\frac{1}{2}$  weeks.

The work was almost entirely tactical and extended from a patrol to a division.

It was designed as a review of the subject for experienced officers, and to familiarize the class with the methods and work of the Service Schools.

It is believed that it was a success. The class did hard, earnest work and covered the ground as thoroughly as possible in the time.

Uniformity of method in military instruction is of great importance in any army; and to one scattered as is ours this seems to me to be the best way to bring it about.

Such classes have another great advantage in that it brings our senior officers into closer touch with the service schools, and more in sympathy with the work and aims of the schools.

The schools gain by the advice of practical officers of wide experience. The latter in this way gain a knowledge of the schools's work that enables them to give help and advice intelligently.

#### **SPECIAL CLASS FOR JUNIOR OFFICERS**

A class of twenty-five officers reported in May for a course extending from May 22 to August 14.

The work was principally in tactics and topography, with a view to special preparation for work with the National Guard.

The course laid out was covered and the work done was satisfactory.

#### RIDING CLASSES

During the year instruction was given in riding, this practice being in place of the hour's required physical exercise.

Fifty-two officers of the schools regularly \*took the course and during the presence here of the special class for field officers, nine of the officers of this class took the course, and such instruction was given later to part of the special class of junior officers here during the summer.

All this instruction work was done by Captain H. R. Richmond, 10th Cavalry. Captain Richmond, besides being a thoro horseman himself, possesses the faculty of teaching. His success was remarkable.

The work was very hard on Captain Richmond. His classes were divided into four sections and part of the time five, requiring about three hours a day in the riding hall. Besides this he commands what is practically equivalent to a company of infantry and a troop of cavalry and did this without a lieutenant to assist.

An officer is needed as assistant to Captain Richmond.

Very Respectfully,  
J. F. MORRISON,  
Lieutenant Colonel, Infantry,  
*Senior Instructor.*

DEPARTMENT OF ENGINEERING  
THE ARMY SERVICE SCHOOLS  
FORT LEAVENWORTH, KANSAS

*August 31, 1911.*

THE SECRETARY,  
*The Army Service Schools.*

SIR:

I have the honor to submit the following report of the work of the Department of Engineering for the school year 1910-1911.

At the beginning of the school year the Department of Engineering was in charge of Captain J. A. Woodruff, Corps of Engineers, with Captain C. O. Sherrill, Corps of Engineers, and First Lieutenant R. E. Beebe, 14th Infantry, as Assistant Instructors. In compliance with War Department orders both Captain Woodruff and Captain Sherrill were relieved from duty at The Army Service Schools, the former on November 15, 1910, and the latter on January 1, 1911. On December 31, 1910, Major E. R. Stuart, Corps of Engineers, having reported for duty under War Department orders, was placed in charge of the Department. In consequence of the completion of the 'new building for The Army Field Engineer School and with a view to coordinating the instruction in \*Engineering at The Army Service Schools, the undersigned was placed in charge of the Department of Engineering on February 28, 1911.

The frequent changes in the personnel of the Department in the midst of the school year, coupled with an insufficient number of instructors, rendered the work of the Department particularly arduous and in some respects not entirely satisfactory. With the

establishment of the Department in the new building of The Army Field Engineer School, already accomplished, and with an additional instructor ordered to report for the ensuing school year, it is anticipated that decidedly improved results will follow.

The work of the Department has consisted in imparting the approved courses of instruction in engineering for The Army School of the Line, The Army Staff College, The Army Field Engineer School, and The Army Signal School. In addition, the Department gave a short course of instruction in map reading to the special field officers' class and a short course in map reading, sketching and field fortification to the special class of officers detailed for a course of instruction, preparatory to duty with the organized militia.

The Department of Engineering also has charge of all work of drafting, photography and lithography for the combined Army Service Schools.

### THE ARMY SCHOOL OF THE LINE

In consequence of the advancement of the date of graduation from June 30th to June 22d, the original course of 106 half-days scheduled for the Army School of the Line was curtailed 5 half-days by the omission of 4 half-days assigned for demonstrations in field fortifications and of one fortification ride. The available 101 half-days were employed as follows:

		<b>WEIGHT</b>	
Military Topography Surveying	I	Theoretical { 12 conferences, 00	
		{ 4 partial examinations 30	
		{ 1 final examination 20	
	(Practical	{	Making surveys and plotting of same so as to construct by exact methods
			a contoured map of of an assigned area. 76

Military Topography Sketching	{	Theoretical	4 conferences	00
		Practical	10 military sketches	1.20
Field Fortifi- cation and Field Engi- neering	{	Theoretical	9 conferences	00
		Practical	Field problems in fortification	30
	Total	{	Theoretical	50
			Practical	225

The course of instruction was practically the same as for the previous academic year except that there was a reduction in the time allotted for surveying.

It is thought that the time heretofore allotted for surveying may be still further reduced with advantage and an increase of time allotted to the subject of field fortifications, the latter subject being deemed of vastly greater importance to all officers, both line and staff, than surveying.

It is accordingly proposed to give more prominence to the subject of field fortification for the ensuing year and to assign an increased weight to this subject.

The work of military sketching has been maintained on the same high standard as heretofore and the results attained have been most satisfactory.

#### THE ARMY STAFF COLLEGE

The work assigned in the Department of Engineering covered 90 half-days and 10 lectures on field fortifications. Owing to the advancement of the date of graduation the scheduled time was curtailed one half-day, leaving 89 half-days for the year's instruction.

The allotted time was employed in practical work only, the bulk of the instruction being in field fortifications and sketching. In addition the Staff class

was employed in assisting in the instruction of The School of the Line.

The lecture course of 10 lectures was devoted to the subject of fortifications and included 6 lectures covering events of the Russo-Japanese war.

#### THE ARMY FIELD ENGINEER SCHOOL

This is a new school for officers of the Corps of Engineers, which has completed the first year of its existence. The instruction in military engineering was devoted to such subjects as engineer officers should know in connection with their duties with mobile armies and comprised courses in surveying and sketching, organization and duties of engineer troops, both line and staff, duties on the Lines of Communications, Field Fortifications and Castrametation.

The time assigned for instruction in military engineering was originally 159 half-days, but was necessarily curtailed 5 half-days by virtue of the advancement of the date of graduation.

The course, being entirely new, was necessarily more or less tentative. Instruction was conducted both theoretically and practically as for the other schools. The theoretical instruction was conducted largely by means of assigned notes and drawings, especially prepared for the purpose by the Department. This method was found necessary owing to the want of suitable textbooks on the various subjects taught.

For the ensuing year it is expected to effect a considerable improvement in the course in military engineering of The Army Field Engineer School by reason of the experience acquired during the first year's instruction. It is proposed to replace several of the textbooks and pamphlets, tentatively used during the past year, by others which have been

found better adapted. The question of a final course will be a matter of several years time involving more or less experimentation.

#### **THE ARMY SIGNAL SCHOOL**

As in previous years a short course in sketching, covering 20 half-days, was devoted to the student officers of The Army Signal School. The work covered six conferences and fourteen practical problems. Student officers who were graduates of The Army School of the Line assisted in the instruction of the non-graduate student officers.

#### **SPECIAL CLASSES**

During the school year, two special classes were under instruction at The Army Service Schools, one, a field officers class and another, a class of captains and lieutenants.

For the Field Officers Class, the Department of Engineering gave a short course in Map Reading and to the class of captains and lieutenants a course of 16 half-days in map reading, sketching and field fortifications.

#### **MAP 'REPRODUCTION**

During the school year the Department of Engineering has continued to supply maps and drawings as required by the different departments of The Army Service Schools. An enormous quantity of work was accomplished and all demands for maps and drawings were promptly and efficiently met. The transfer of the working departments of photography, lithography and drafting from the attic spaces in Sherman Hall to the new Engineer school building, in rooms specially designed and equipped, has contributed materially to the improvement of the work of map reproduction.

The principal items of work accomplished during

the year were the completion of all the war game sheets of the Gettysburg map. Continuation of work on the Leavenworth war game map, and beginning of a strategical map, 1 inch to the mile, of the Gettysburg-Antietam region, using the Geological survey sheets as a basis.

The lithographic department is equipped with hand press only capable of making 250 impressions per day. The demands for maps from all sources has steadily increased and to such an **extent as** to tax the capacity of the hand press to the utmost.

The work of the Department of Engineering has been ably and faithfully seconded by the Assistant Instructors, Major E. R. Stuart, Corps of Engineers, and First Lieutenant R. E. Beebe, 14th Infantry, and I desire to express my sincere appreciation of their services.

Very respectfully,

JOSEPH E. KUHN,

*Lieutenant Colonel of Engineers,*

*Senior Instructor.*

DEPARTMENT OF LAW .  
THE ARMY SERVICE SCHOOLS  
FORT LEAVENWORTH, KANSAS

*August 31, 1911.*

THE SECRETARY,  
*The Army Service Schools.*

SIR:

I have the honor to submit the following report of the Department for the past year:

**LINE CLASS**

The course consisted of —

Elements of Law,	-	15 half days
Criminal Law,	-	10 half days
Law of Evidence	-	23 half days
Practical Exercises	-	5 half days
Total	-	<hr/> 53 half days

The work of the class was entirely satisfactory and up to the high standard of the previous classes.

Every effort is made to make the course a practical one and to instruct the student how to find the law and how to apply it to actual cases when found.

For the coming year the number of half-days allotted to the Department will be reduced to forty-five. This reduction in time will result in eliminating from the course every portion not having a direct bearing upon military law or the relation of the military to the civil authorities.

The textbooks used will remain as during the past year, to wit:

Smith's Elements of Law.  
Clark's Criminal Law.  
McKelvey's Law of Evidence.

**THE STAFF CLASS**

The course consisted of —

Constitutional Law, 21 half days  
Military Government and Martial Law, 40 half days

The work of the class was most satisfactory. Each member of the class prepared a paper giving a short history of military government as exercised by the United States over some portion of territory. Together, these papers form a complete history of military government as exercised by the United States from the cession of Louisiana to the second occupation of Cuba. A number of these papers will be published in the service journals. In addition to this work the class prepared for publication the leading cases on Military Government. These will be published for use in the school.

There was introduced in the course this year a practical problem in Military Government. This proved a success and a number of such problems will be introduced next year.

. . . During the coming year the number of half-days allotted to the Department will be reduced from 61 to 29. This will necessitate eliminating the course in Constitutional Law and that portion of the course in Military Government and Martial law which calls for the preparation of a thesis.

. . . To my assistants, Captain Tenney Ross, 3d Infantry, Captain Willey Howell, 6th Infantry, and First Lieutenant Edward K. Masee, Infantry, I am greatly indebted for their earnest efforts to make the course a successful one, and for their loyalty to the school and to me personally. It is with regret that I part with Captains Ross and Howell who, having served here four years, have been ordered to join their regiments.

Very respectfully,  
HARRY A. SMITH,  
*Captain, Infantry,*  
*Senior Instructor.*

DEPARTMENT OF LANGUAGES  
THE ARMY SCHOOL OF THE LINE  
FORT LEAVENWORTH, KANSAS,

August 31, 1911.

THE SECRETARY,  
*The Army School of the Line.*

SIR:

I have the honor to submit the following report of the work in this department in Spanish, Army School of the Line, 1910-U:

Time allotted, 45 half-days; began February 21, ended June 5, 1911. Weight 100.

Number of conferences, 40; length of conference per student, one hour and twenty-five minutes.

**PRACTICAL WORK**

Four oral tests, aggregate weight, 60.

One written examination, weight 40.

Number of officers instructed, 35; Line officers, 33, Engineers, 2.

Number of Sections, 8.

*Instructors*; Major Aultman, Captain Kelly, Lieutenant Martin, Lieutenant Krueger.

**TEXT BOOKS**

A Course in Spanish by the Department.

El Castellano, Actual, Román y Salamero.

Progress was as satisfactory as could be expected under the unfavorable conditions necessarily existing. The number of students beginning the course with any accurate knowledge of the language was not over one-sixth. The text-book on grammar, notwithstanding its recognized value as a standard and for other purposes, proved to be wholly unsuitable for the members of the Line Class. For all students except the small fraction mentioned, the pace was so

rapid and the mass of matter consumed so great that the course was of little practical value.

The work of all instructors showed tact, patience, ability, zeal and temperamental fitness. To these qualities and to the extraordinary work of the students, is due the fact that the results proved to be as good as they did.

Instruction of the Line Class in Spanish terminates with the close of the current school year.

Respectfully,

THOS. G. HANSON,

Major, *Infantry*,

*Senior Instructor.*

DEPARTMENT OF LANGUAGES  
THE ARMY STAFF COLLEGE  
FORT LEAVENWORTH, KANSAS

August 31, 1911.

THE SECRETARY,  
*The Army Staff College.*

SIR:

I have the honor to submit the following report of the work of this department, Army Staff College, 1910-11:

Time allotted, 90' half-days; began September 1, 1910, ended January 31, 1911.

Numer of conferences, 90; length of conference per student, one hour and twenty-five minutes.

**NUMBER OF OFFICERS INSTRUCTED**

German (by election), 8—two sections.

French (by election), 9—two sections.

Spanish (without election), 6—two sections.

In each language, one officer under instruction belonged to the Signal School. Daily lessons will be found in printed lists.

Each course consisted of instruction in grammatical principles with copious illustrations and practical work, as far as practicable, conversational, supplemented by optional phonograph work by students.

**GERMAN**

*Instructor:* First Lieutenant Walter Krueger, Infantry.

**TEXT-BOOKS**

Practical German Grammar, Thomas.

German Exercises, Department.

Glück Auf, Müller and Wenckebach.

Das Deutsche Heer, Gernandt.

Ein Neues Wörth—Ein Schlachtenbild der Zukunft,  
Hoppenstedt.

Progress of this class, generally satisfactory. All work showed interest and zeal. All members acquired accuracy and facility in translating. The five members of the First Section developed also a fairly accurate conversational fluency.

### FRENCH

*Instructor:* First Lieutenant C. F. Martin, Cavalry.

#### TEXT-BOOKS -ADVANCED COURSE

French Pronunciation, De Peiffer.  
Genders and Cognates, Department.  
The French Verb, Martin.  
French Conversational Lessons, I. C. S.  
Le Petit Parisien, Kron.  
Le Petit Soldat, Kron.  
Third Year in French, Syms.

Progress of class satisfactory. Work faithful and zealous; all members able to translate with facility and accuracy. Conversational fluency of all members, fair.

### SPANISH

*Instructor:* Captain William Kelly, Jr., 9th Cavalry.

#### TEXT-BOOKS-ADVANCED COURSE

A Course in Spanish, Department.  
El Casfellano Actual, Román y Salamero.  
Practical Spanish, De Arteaga, Parts I and II.

Progress, as satisfactory as could have reasonably been expected. A material obstacle to progress was the insufficient foundation in the rudiments of the language, acquired in the hasty forty-lesson course in Spanish while the students were members of the Line Class. This foundation was not much improved by a second perusal of the same text-book. All of the students showed a natural inaptitude for Spanish, and all had been required to take the Staff Class course in that language. Notwithstanding these conditions, all the members of this class had,

by the end of the course, mastered some of the essential rudiments of the language and were able to translate from Spanish into English with fair accuracy. Conversational fluency could not have been expected and was not accomplished.

. **REMARKS ON STAFF CLASS WORK**

The time ' given to 'each language is to be increased to 106 half-days for 1911-12, and to 151 half-days thereafter.

The removal of text-books believed to be unsuitable has been effected, and suitable books have been substituted therefor.

All the Instructors of this department have performed their work in an entirely satisfactory manner; each is peculiarly fitted for the work assigned him, and each has shown full measure of tact, patience and zeal.

Respectfully,

THOS. G. HANSON,  
*Major, Infantry,*  
*Senior Instructor.*

DEPARTMENT CARE OF TROOPS  
THE ARMY SERVICE SCHOOLS  
FORT LEAVENWORTH, KANSAS

August 31, 1911.

THE SECRETARY,

*The Army Service Schools.*

SIR :

I have the honor to report upon the work of instruction conducted by this office during the past year. This work, covering both the prevention of disease and the organization, and tactical use of the sanitary service in war, has been divided among the following:

1. School of the Line
2. Staff College
3. Special School for Field Officers
4. Medical Officers' Correspondence School
5. Field Service School for Medical Officers

Work with the School of the Line was conducted under the Department of Military Art, coordinating with its general course. It included four conferences on organization and field management of the sanitary service, nine conferences on field hygiene and sanitation and the prevention of disease in camps, and the solution of two problems, upon which graded marking was given—one problem being on the tactical use of the regimental sanitary service and the other on the correction of an unsanitary and unhealthful camp.

Instruction in the Staff College was in part a continuation of the instruction in disease prevention, in decrease of military wastage, previously given the class as members of the School of the Line. On this subject, twelve lectures were given. In addition,

eight lectures were given which related to certain broader aspects of the part played by the sanitary service in the pro-motion of military efficiency. A problem in sanitary tactics completed the course.

With the Special Class of Field Officers, four conferences on sanitary organization and tactics, and two lectures on certain important relations of the sanitary service to the combatant forces, were given.

In the Correspondence School for Medical Officers, eight problems were sent out for solution near the end of the school year 1909-10, to thirty medical officers designated by the Surgeon General. Solutions were returned in writing and commented upon during the school year 1910-11. A few of these solutions were excellent, most were only fair and some distinctly poor. As the student medical officers concerned were allowed free access to any source of information or assistance, and had several months in which to prepare and return their solutions, the results may be regarded as indicating a very great and practical need for instruction of medical officers along the line of work indicated.

As a result of the mobilization of troops, higher authority directed that no problems be sent out to medical officers under this correspondence school during the school year 1910-11.

The Field Service School for Medical Officers, ordered to convene for a six weeks' session on April 1st, was likewise officially ordered to be suspended as a result of the mobilization of troops. Orders had been issued for its attendance by seven regular and six militia medical officers. What is believed to be a very comprehensive course of instruction had been prepared in anticipation of this session. In view of the fact that this session was to have been the first held under the new school established under General Orders No. 132, War Department, July

11, 1910, and that the character and scope of this course indicates the nature and extent of the medico-military knowledge which it is thought that medical officers should at least possess, the schedule of this course is here submitted, as follows:

**SCHEDULE OF INSTRUCTION**  
**FIELD SERVICE SCHOOL FOR MEDICAL OFFICERS**  
**SESSION OF 1911**

**APR. HR.**

- |    |       |  |
|----|-------|--|
| 3  | 9:00  | Major Munson, Conference : The tactical training of medical officers.  |
|    | 10:45 | Major Morrison, Conference: Organization,  |
|    | 1:00  | Major Stuart, Conference: Maps and their varieties; scales and their uses; conditions making for accuracy and otherwise; scales and distances in relation to solution of problems. |
| 4  | 9:00  | Major Stuart, Conference; followed by map reading on terrain.  |
|    | 1:00  | Major Morrison, Conference; Marches.   |
|    | 2:45  | Major <b>Munson</b> , Conference : General sanitary organization for war.  |
| 5  | 9:00  | Major Morrison, Conference : Battles,  |
|    | 10:45 | Major Munson, Conference : Sanitary dispositions in marching columns.  |
|    | 1:00  | Major Stuart, Conference: followed by exercise in pacing, use of instruments and preliminary work in sketching.  |
| 6  | 9:00  | Major Stuart, Continuation of work of April 5th, Problem No. 1, Visibility of points.  |
|    | 1:00  | Major Morrison, Conference: Administration and Supply  |
|    | 2:45  | Major Munson, Conference ; The sanitary service on and near the firing line.   |
| 7  | 9:00  | Major Morrison, Conference: Staff Duty.  |
|    | 10:45 | Major Munson, Conference : Stations for slightly wounded; ambulance companies.   |
|    | 1:00  | Major Sayre, Lecture : War games; tactical walks and rides.  |
| 7  | 9:00  | Instructors <sup>1</sup> War Game. Two sides. Class as observers.  |
|    |       | <b>P.M.</b> No exercises.  |
| 10 | 9:00  | Major Morrison, Conference : Supply, Lines of Communication and the Base.  |
|    | 10:45 | Major Munson, Field Hospitals ; Reserve Medical Supplies.  |
|    | 1:00  | Major Stuart, Continuation of work of April 6. Problem No. 2, Zones of probable casualty.  |
| 11 | 9:00  | Major Munson, Conference : The sanitary formations of the line of communications and the base. General summary.  |

- 1:00 Captain Eltinge, Lecture: Panic in war, with special relation to the sanitary service.
- 12 9:00 Major Munson, Conference : The preparation of solution of sanitary map problems.
- 10:45 Captain Eltinge, Lecture: Tactical use of cavalry.  
P.M. Problem No. 3: Sanitary service with the detached battalion in the advance and attack.
- 13 9:00 Major Stuart, continuation of work of April 10, Problem No. 4: The security of relief stations.
- 1:00 Major Munson, Conference on Problem No. 3. Problem No. 5: Sanitary service with the detached battalion in retreat, and occupation of a defensive position.
- 14 8:00 Major Munson, Problem No. 6: Terrain exercise -Sanitary service with a squadron acting as advance cavalry.
- 1:00 Major Stuart, Preliminary road sketch.
- 15 9:00 Instructors' War Game. One side. Part of class participates.  
P.M. No exercises.
- 17 9:00 Major Stuart, Record road sketch.  
P.M. Continuance of work of morning.
- 18 9:00 Major Stuart, Preliminary position sketch.
- 1:00 Captain Thomason, Paper and Conference : The organization, management, duties, training, etc., of a newly raised infantry regiment in camp and campaign.
- 19 9:00 Major Mall, Paper and Conference: The management, duties, difficulties and special methods of the sanitary service with troops on riot duty.
- 1:00 Major Munson and Captain Eltinge, Conference on Problems Nos. 5 and 6. Problem No. 7: The sanitary service with an independent infantry regiment on the march and in attack.
- 20 9:00 Major Stuart, Record position sketch.  
P.M. Continuation of mornings work.
- 21 9:00 Major Munson, Conference on Problem No. 7. Problem No. 8: The sanitary service with an independent infantry regiment on the retreat and with forced occupancy of a defensive position.
- 22 8:00 Actual solution in the field of a regimental sanitary problem.  
P.M. No exercises.
- 24 9:00 Major Munson, Conference on Problem No. 8.
- 10:45 Captain Bevans, Paper and Conference on personnel, organization, duties, training, supplies, transportation, etc., of ambulance companies.  
P.M. Continuation of Captain Bevan's conference.
- 25 9:00 Major Bispham, Paper and Conference on the organization, personnel, supplies, transportation, training and use of field hospitals.  
P.M. Continuation of Major Bispham's conference. Problem No. 9: Sanitary dispositions in the re-enforced brigade moving to attack, and its ad-

- vance guard: an advance guard rencontre; collision of cavalry patrols.
- 26 9:00 Major Munson, Conference on Problem No. 9.  
Problem No. 10: Disposition of the sanitary service with a re-enforced brigade under a tactical reverse, on the retreat; and with occupation of a defensive position.
- 27 9:00 Major Munson, Conference on Problem No. 10.  
Problem No. 11: Disposition of the sanitary service with the reinforced brigade in a planned defense.
- 28 8:00 Major Munson and Captain Baltzell, Conference, on the terrain concerned, of Problem No. 11,  
1:00 Major Dean, Paper and Conference on the sanitary service with independent cavalry. Discussion by Captains Eltinge and Fitch.
- 29 9:00 Instructors' War Game. Two sides. Entire class participates.  
P.M. No exercises.
- MAY
- 1 9:00 Major Clayton, Paper and Conference on the organization, function, management, personnel, supplies., etc., of Evacuation Hospitals.  
1:00 Major Munson, Conference on the civil sanitary function of the Medical Department in occupied territory: with assignment of Problem No. 12 on same subject.
- 2 9:00 Captain Howell, Lecture: The laws of war on land, in relation to sick and wounded, the sanitary personnel, materiel and organizations.  
P.M. Occupied in solution of Problem No. 12.
- 3 1:00 Captain Howell, Lecture: Continuation of subject of May 2.  
10:45 Major Munson, Conference and assignments on Problem No. 13: The sanitary organization, equipment and supply of an expeditionary force.  
1:00 Major Munson, Conference on Problem No. 8.
- 4 9:00 Major Straub, paper and Conference on the sanitary service of the Line of Communications.  
1:00 Lieutenant-Colonel Kuhn, Lecture: Impressions of a combatant officer concerning the sanitary service of the Japanese army.
- 5 9:00 Major Reynolds, Paper and Conference on the sanitary service of the base.  
P.M. Occupied in solution of Problem No. 13.
- 6 9:00 Instructors' War Game. Two. Sides. Entire class participates.-  
P.M. No exercises.
- 8 8:00 Major Munson and Captain Eltinge, Tactical ride entire day, demonstrating the sanitary service of an attacking division.
- 9 9:00 Entire day occupied in solution of Problem No. 13.
- 10 8:00 Major Munson and Captain Eltinge, Tactical ride, entire day, demonstrating the sanitary service of a division fighting a delaying action.

- 11 Entire day occupied in solution of Problem No. 13.
- 12 Entire day occupied in solution of Problem No. 13.
- 13 9:00 Major Munson, Conference on Problem No. 13.

[CONCLUSION OF COURSE]

The undersigned desires here to record his thanks to the various instructors of these schools whose names appear in the above schedule, and who gave much kindly interest and effort to promoting its completeness and probable success.

It is proposed to have a similar course followed during the coming school year.

Finally, the early stationing at this post of field sanitary organizations for demonstration purposes, of which official assurances have been given, will do much to increase the value of the work relating to the field use of sanitary troops to all officers in attendance on the above courses.

Very respectfully,

E. L. MUNSON,.

*Major, Medical Corps,*

*Asst. Comd't, Field Service and Corresp. Sch. for Med. Officers;  
Senior Instructor, Department Care of Troops.*

THE ARMY FIELD ENGINEER SCHOOL  
FORT LEAVENWORTH, KANSAS

*August 31, 1911.*

THE SECRETARY,  
*The Army Service Schools.*

SIR:

I have the honor to submit the following report of work done in The Army Field Engineer School during the academic year 1910-11:

At the beginning of the year the new building *for* this school was under way but was not completed and ready -for occupancy until April 1911. The building forms an annex to Sheridan Hall, is four stories high and of fire-proof construction.

The building was erected at a cost of \$50,000.00 and was designed to accomodate not only The Army Field Engineer School, but to provide for the instruction in Military Engineering of all the service schools, as well as to house the map reproduction work rooms. The building has been in use since April 1911 and has proved entirely satisfactory.

The object of The Army Field Engineer School is the preparation of officers of the Corps of Engineers for the better performance of their military duties.

The first class of The Army Field Engineer School reported for instruction August 15, 1910. It consisted of two First Lieutenants of the Corps of Engineers.

The course of instruction tentatively adopted for this first class comprised courses in Military Art, Military Engineering and Languages. It was deemed

best to omit all instruction in Military Law in order to gain more time for Military Engineering.

The courses in Military Art and in Languages are the same as for The Army School of the Line and are given by the Departments of Military Art and Languages of the latter school. The course in Military Engineering is quite different both as regards length and subject matter, from that of The Army School of the Line and has been under the direct personal charge of the Assistant Commandant of The Army Field Engineer School.

The close relation of the student officers of The Army Field Engineer School and of The Army School of the Line requires that the former should be officers of approximately the same length of service and experience as the latter. Since the student officers of The Army School of the Line are uniformly of the grade of captain or higher, the student officers of The Army Field Engineer School should likewise be captains or higher.

The facilities and plant of The Army Field Engineer School should be taken advantage of by a larger number of Engineer officers and it is hoped that classes exceeding two officers will be detailed hereafter.

JOSEPH E. KUHN,  
*Lieutenant-Colonel of Engineers,*  
*Assistant Commandant.*

# THE ARMY SIGNAL SCHOOL

OFFICE OF ASSISTANT COMMANDANT

*Fort Leavenworth, Kansas, August 31, 1911.*

THE SECRETARY,  
*The Army Service Schools.*

SIR:

\*I have the honor to submit the following report of the work of The Army Signal School for the school year ending this date:

The following instructors were regularly assigned to duty with the School by proper authority:

## DEPARTMENT OF SIGNAL ENGINEERING

Major Edgar Russel, Signal Corps, Senior Instructor.

Captain G. E. Mitchell, Signal Corps, Instructor.

First Lieutenant J. A. Brockman, Signal Corps, Instructor, relieved by First Lieutenant J. O. Mauborgne, 3d Infantry.

## DEPARTMENT OF LANGUAGES

Instruction was given by the Department of Languages, Army School of the Line.

## DEPARTMENT OF TOPOGRAPHY

Instruction was given by the Department of Engineering, Army School of the Line.

First Lieutenant E. K. Masee, Infantry, was especially assigned as instructor in topography, and conducted the sketching course for this year's class.

## STUDENT OFFICERS

The following student officers were graduated June 5, 1911:

Captain J. F. Janda, 1st Infantry.

Captain C. DeF. Chandler, Signal Corps.

Captain James Justice, 22d Infantry.  
Captain H. A. Hanigan, 22d Infantry,  
Captain W. N. Michel, Signal Corps.  
Captain H. B. Kirtland, Signal Corps, Ohio National  
Guard.  
First Lieutenant L. J. Mygatt, Signal Corps.  
First Lieutenant O. P. Robinson, Signal Corps.  
First? Lieutenant I. F. Fravel, 24th Infantry.  
First Lieutenant W. S. Barriger, Signal Corps.  
First Lieutenant C. Lynn, Signal Corps.  
First Lieutenant G. R. Guild, Signal Corps.

Captain G. S. Gibbs, Signal Corps, was relieved from duty with The Army Signal School on March 9, 1911, pursuant to telegraphic orders of the War Department, for duty with Company "D," Signal Corps, the exigencies of the service requiring his immediate assignment to this company at the camp at San Antonio, Texas.

Captain John W. Barker, Signal Corps, was assigned to duty at The Army Signal School by paragraph 14, Special Orders, No. 139, War Department, June 15, 1910, to take a special course, was relieved from detail in the Signal Corps by paragraph 14, Special Orders No. '72, War Department, March 28, 1911, and from duty with The Army Signal School by paragraph 18, Special Orders No. 119, War Department, May 22, 1911.

\* The following officers were on duty with Company "A," Signal Corps, stationed at this post., until its departure for the Mexican border on February 6, 1911, pursuant to telegraphic orders of the War Department:

Captain W. M. Cruikshank, Signal Corps.  
First Lieutenant A. L. Singleton, Signal Corps, from  
June 17, 1910, to October 20, 1910.  
First Lieutenant J. O. Mauborgne, 3d Infantry, from  
June 17, 1910, to November 30, 1910.  
First Lieutenant J. A. Brockman, Signal Corps, from  
November 30, 1910, to January 17, 1911.

It was recommended last year that the resources of the School be utilized to the fullest possible extent. This recommendation, in view of the three objects for which the School was established, name-

ly, (1) to give instruction to officers of the Signal Corps or those of, the line who may contemplate being detailed in the Signal Corps, (2) to disseminate knowledge concerning the Signal Corps and its proper utilization, and (3) to make research in matters which promise to be of service in field signaling and telegraphy, is earnestly renewed this year, in view of the very excellent results that have been obtained in the past year along the lines named above. Although but a few of the student officers had received much technical training in matters pertaining to the Signal Corps, yet diligent application and enthusiasm has produced the most remarkable results. It is believed that it is very much to the interest of the service at large to utilize the instructors, the laboratory, and the field company of the Signal Corps stationed here in the instruction of as many officers as can be accommodated.

#### METHOD OF INSTRUCTION

*Theoretical:* The standard text books which were used last year are as follows:

- American Telegraphy **and** Encyclopedia of the Telegraph—Mayer.
- Principles of Wireless Telegraphy—Pierce.
- Lessons in Practical Electricity—Swoope.
- Primary Batteries - I. C. S. Pamphlets.
- Storage Batteries-I. C. S. Pamphlets.
- Management of Military Telegraph Lines-Signal Corps Manual No. 2.
- Electrical Instruments and Telephones of the U. S. Signal Corps-Signal Corps Manual No. 3.
- Visual Signaling-Signal Corps Manual No. 6.
- Property and **Disbursing** Regulations of the U. S. Signal Corps-Signal Corps Manual No. 7.
- Fire Control--Signal Corps Manual No. 8.
- Pamphlet on Static Electricity.
- Principles of Gas Engines-I. C. S. Pamphlet.
- Carbureters-I. C. S. Pamphlet.
- Electric Ignition Devices-I. C. S. Pamphlet.
- Troubles and Remedies-I. C. S. Pamphlet.
- Elementary Treatise on Alternating Current Calculation—Pamphlet.
- Appliances for Electrical Measurements-Haskins.

DEPARTMENT OF SIGNAL ENGINEERING

*Theoretical:* This department, in which is consolidated the Department of Signaling of former years, has general charge of instruction in the fundamental laws and principles of electrical engineering, theoretical and practical instruction in the appliances and methods of military signaling and telegraphy and in a number of related branches of scientific study included in the list below:

ALLOTMENT OF TIME

Theoretical, 173 half-days.

Practical, 120 half-days.

The course included instruction in—

- (a) Practical Electricity.
- (b) Signal Corps Manuals.
- (c) Alternating Current.
- (d) Oil Engines.
- (e) Fire Control Apparatus
- (f) Laboratory Work.
- (g) Photography.
- (h) Aeronautics.
- (i) The Field Telegraph.
- (j) The Field Telephone.
- (k) The Field Buzzer.
- (l) Wireless Teiography.
- (m) Visual Signaling.

In addition to the text books, lectures were given through the course, as listed in the appendix. The abolishment of review lessons and a corresponding increase in the written problems through the course has proven entirely successful. In general, it may be stated that three lessons have been followed by a written problem involving the part covered by the text in these lessons.

The combination of the recitation and conference methods in the theoretical instruction which was also introduced last year has given excellent results. By judicious questioning in connection with the free discussion involved in the conference method the student officers have been led to clear up difficulties dis-

closed by such questioning. This method, in combination with frequent written problems, has had a marked effect in improving the general character of the work.

There was introduced this year a special problem necessitating considerable research, in which the student officers were required to study the organization, equipment, transportation and assignment to duties of the signal troops accompanying an army of occupation assumed to be in a Central American state. This problem was put into the course as an extra piece of work, and the results obtained were so satisfactory that an extension of this kind of work will be taken up next year. Two war games involving especially Signal Corps operations were also introduced, but early graduation prevented any more extensive studies of this kind.

Captain George E. Mitchell, Signal Corps, had immediate charge of this theoretical instruction, aside from lectures. Much of the success which has been obtained by the methods stated above has been due to his efforts.

*Practical:* Nearly all of the practical instruction this year has been in connection with the laboratory work. Included in this is the instruction given in visual signaling, indoors and out, in telegraphy, photography and aeronautics.

In visual signaling student officers were required to be able to send and receive five words per minute with either the flag, the heliograph, or acetylene lantern. In telegraphy they were required to be able to send or receive ten words per minute from the field buzzer. In both visual signaling and telegraphy the sending was from messages filed with them, and count was taken including the usual office marks, numerals, etc., involved in the proper checking of messages.

The laboratory work was taken up January 3d, and covered a total of 89 half-days.

As in previous years, the method followed in the laboratory was to begin with a number of elementary problems, largely in electrical measurements, which serve to fix the principles and give familiarity with electrical measuring instruments.

As soon as the student officers had become familiar with the elements, they were thrown almost entirely upon their own responsibility, the assumption being that each problem given them was a subject upon which a regular report was to be made, and it was necessary for them to provide themselves with the proper apparatus to return a complete and satisfactory report. In preparing solutions they were permitted to consult any reference books or notes of their own. The reports were prepared in accordance with the rules which appear in the appendix.

The following new problems were introduced during the year:

1. To determine resistances of coils, current and voltage of wireless hand generator. Give diagram of circuits.

2. To charge storage batteries.

3. To set up and operate some direct current arc lamp, Western Electric pattern. Give wiring diagram.

4. Determine the mechanical and electrical efficiency of a 2 horsepower direct current motor.

5. Make wiring diagrams of local and common battery switchboards.

6. Special laboratory problem: I. -Make a drawing of the circuits of a double-current generator as they now are, with all instruments and switches in proper relation from front of board. 2. Test to determine the efficiency of the machine as a motor-

generator, both 2-phase and 3-phase. 3. Using direct-current generator in Engineer School, test the machine for efficiency as an inverted converter.

7. Special problems in wireless telegraphy.

The following new apparatus was added to the laboratory:

1 double-current generator, 10 k.w., 3-phase, 2-phase, single-phase, and direct-current.

1 Ayrton-Mather galvanometer.

1 Duddell thermo-ammeter.

Complete cable-testing set installed.

In the last two months in the laboratory special committees, composed of student officers and instructors, were appointed, to make research on various matters that may be of interest to the Signal Corps, or which were referred to the School for investigation from the office of the Chief Signal Officer, as follows:

*Lieutenant Robinson:* Construction of photographic field outfit.

*Lieutenant Guild:* Construction of induction field telegraph set that can be used as induction simplex set, induction duplex, induction-induction repeater, induction-closed circuit repeater, induction-open circuit repeater, closed circuit-closed circuit repeater, closed circuit-open circuit repeater, open circuit — open circuit repeater, phantom induction circuit, central battery condenser simplex set. This set is composed of such instruments that it can be used on closed-circuit lines, open-circuit lines, induction lines, and condenser circuits..

*Lieutenants Barriger and Fravel:* Reconstruction of field telephone.

*Captain Michel and Lieutenant Barriger:* Construction of small portable wireless telegraph set for use of artillery reconnaissance officer.

, *Captain Justice and Lieutenants Fravel and Lynn:*

Committee to decide upon suitable voltmeter for field companies of Signal Corps.

*Captains Barker, Hanigan and Janda:* Committee to decide upon suitable wrist-watch for use of operators of field companies.

*Captain Michel:* Examination and report on new artillery. telephone.

*Captain Chandler:* Test of flashlight batteries and direct-current telephone receivers.

*Captains Gibbs, Kirtland and Mitchell and Lieutenant Robinson:* Committee to examine into the comparative merits of the new Edison nickel-iron storage battery..

The entire class participated in the construction of three special portable wireless sets, each assembled in a pack chest. These were operated by the class up to distances of twelve miles.

Lieutenant Mauborgne, in addition to his work as instructor in the laboratory, carried' on much special work for the Signal Corps in wireless telegraphy. Due largely to his efforts, a complete receiving equipment for field sets has been devised, which is about to be adopted as the standard for field sets, This work required an immense amount of laborious research, and it is believed that the result has placed in our hands the best and most compact receiving set which it is possible to devise. Lieutenant Mauborgne's skill in laboratory matters has resulted in a most satisfactory year'S work in that department.

#### FIELD EXERCISES

Because of the absence of a field company of the Signal Corps in the last three months of the course, it was necessary to limit field exercises to only those of practical experience with the field wireless sets. This is very regrettable, as the progressive problems

that were worked out last year in connection with the field company were the most interesting part of the course, and necessary in the complete preparation for field work with the apparatus which had been so carefully investigated in the laboratory.

It is hoped that next year, in accordance with a former recommendation, a short course in military art may be prepared by the department of that designation and introduced in the Signal School, in the form of lectures. This will serve in the best possible way to prepare the officers of the Signal School for the estimation of situations, preparation of orders, solution of map problems, and war games which lead up to field exercises at the close.

#### COURSE IN PHOTOGRAPHY

The feature of this year's instruction in photography has been the introduction of more extensive instruction in the use of hand-cameras and the production of films, negatives and prints under field conditions. The student officers became deeply interested, in the brief course, and continued, independently, much interesting work therein long after the expiration of the regular course.

As expected from such increased interest, it was possible to secure many photographic illustrations of reports from these officers, and the course has resulted in much practical value.

Lieutenant O. P. Robinson, Signal Corps, was very successful in the preliminary work of designing a field photographic outfit, which it is thought may prove of value for reconnaissance.

#### THESES .

In view of the number of hours of extra work introduced in the course this year, the graduating theses, a list of subjects of which are given below, are most complete and satisfactory productions.

Captain C. DeF. Chandler, Signal Corps---Telegraph Battalions and Semi-permanent Lines.

Captain J. F. Janda, 1st Infantry—Telegraph Operations of English During War in South Africa.

Captain H. A. Hanigan, 22d Infantry- -Communications Between the Brigade and the Firing Line.

Captain James Justice, 22d Infantry-Relation of Signal Troops to Line Troops in the Field,

Captain W. N. Michel, Signal Corps--Artillery Communication.

Captain Harry B. Kirtland, Ohio National Guard-An Inquiry into the Condition and Needs of the Signal Corps of the Organized Militia.

First Lieutenant L. J. Mygatt, Signal Corps-Communications in the Boer War.

First Lieutenant C. Lynn, Signal Corps-The Aeroplane Considered as an Instrument of Communication and Reconnaissance.

First Lieutenant I. F. Fravel, 24th Infantry-Camp Telephone Systems.

First Lieutenant W. S. Barriger, Signal Corps-- Storage Batteries.

First Lieutenant O. P. Robinson, Signal Corps — Field Photographic Outfit.

First Lieutenant G. R. Guild, Signal Corps 'The Use of the Polarized Sounder with Military Telegraph Lines.

#### TECHNICAL CONFERENCE&

Each year has seen an extension -of the work undertaken by the technical conferences of The Army Signal School. In the year just past a marked advance has been made over previous years, one of the prominent features of which has been the increased interest shown by- the signal officers of the National Guard. The greater interest thus shown has been due largely to the energetic and efficient services of Captain Harry B. Kirtland, Ohio National Guard, a student officer in this year's class, who acted as secretary of the technical conferences. Through the efforts of this officer the attention of the National Guard has been secured in a way that could not have been possible otherwise.

The publication of the proceedings and the illustration' thereof has been made possible through the

co-operation of the Secretary, the Army Service Schools, and the Department of Engineering.

There follows a list of subjects presented at this year's technical conferences:

Conference No. 1:

"Development of the Use and Equipment of Signal Troops of the Organized Militia," by Major C. McK. Saltzman, Signal Corps.

"Progress in the Development of a Wire Cart by the Signal Corps," by Captain Charles DeF. Chandler., Signal Corps.

Conference No. 2:

Translation from the French on "Visual Signaling in Eastern German-Africa from 1901 to 1908" originally from *Militär Wochenblatt*, by Capt. J. F. Janda, 1st Infantry. Report of Captain Samuel G. Shartle, C. A. C., American Military Attache, Berlin, Germany, on "Air Craft for the Army."

"A Simple Device for Practice in Sending and Receiving With the Buzzer," by Major E. Russel, Signal Corps.

Conference No. 3:

"Visual Signaling among Line Troops," by First Lieutenant G. R. Guild, Signal Corps.

"Regimental Communication and Instruction of Signal Details," by Captain W. N. Michel, Signal Corps.

Conference No. 4:

"Principles of Wireless Telegraphy," by First Lieutenant W. S. Barriger, Signal Corps.

Conference No. 5:

"Signal Corps Communications in the Street Car Strike at Columbus, Ohio," by Captain Harry B. Kirtland, Signal Corps, Ohio National Guard.

"Regimental Visual Signaling," by Captain H. A. Hanigan, 22nd Infantry.

Conference No. 6:

"Lines of Information between the Units of an Army in the Field," by Captains George S. Gibbs and Charles DeF. Chandler, Signal Corps.

"The Need for Visual Signal Squads," by Captain H. A. Hanigan, 22nd Infantry.

Conference No. 7:

“The Aeroplane and Warfare,” translation by First Lieutenant Clark Lynn, Signal Corps, from *Sciences Militaires*, 1910.

“A Proposed Electrical Instrument Designed to Record the Values of Scores at Small Arms Practice,” by First Lieutenant G. R. Guild, Signal Corps.

Conference No. 8:

“The Instruction of Signal Corps Officers of ‘the National Guard,’” by First Lieutenant L. J. Mygatt, Signal Corps.

“Telephone Line Protection,” by First Lieutenant W. S. Barriger, Signal Corps.

“The Comparative Merits of Two Ways of Carrying Light Wireless Sets with Field Companies of the Signal Corps,” by Captain George S. Gibbs, Signal Corps.

“Automatic Repeaters between Open and Closed Circuit Telegraph Systems,” by Captain C. DeF. Chandler, Signal Corps.

Conference No. 9:

“Railroad, Telegraph, Telephone, and Cable Communication in and with Mexico, by First Lieutenant, I. F. Fra-vel, 24th Infantry.

“The Ascensional Force of Balloon Gas,” by Captain C. DeF. Chandler, Signal Corps.

Conference No. 10:

“The Aeroplane as an Aid to a Field Army,” by Captain James Justice, 22d Infantry.

“Apuntes de Telegraphin Militar,” translation from the Spanish by First Lieutenant O. P. Robinson, Signal Corps.

“Direct Current Telephones,” by Captain C. DeF. Chandler, Signal Corps.

Conference No. 11:

“The Single Phase Railway Motor,” by First Lieutenant W. S. Barriger, Signal Corps.

“Battle, Fire and Mine Commands in the Coast Artillery,” by Captain W. N. Michel, Signal Corps.

Discussion of Proposed Plans and Estimates for a Camp Telephone System for a Field Army of Three Divisions.

Conference No. 12:

“Multiplex Telephony and Telegraphy by Means of Electric Waves Guided by Wires,” by Major George O. Squier, Signal Corps.

“Edison Storage Battery and Its Suitability for Use with Field Wireless Sets,” report of committee consisting of

Captain George E. Mitchell, Signal Corps, Captain Harry B. Kirtland, Signal Corps, Ohio National Guard, and 1st Lieutenant O. P. Robinson, Signal Corps.

“Notes on Aeronautics,” bulletin prepared for Chief Signal Officer by Captain C. DeF. Chandler, Signal Corps.

Conference No. 13:

Report of Committee on Visual Signaling for Line Troops presented by Captain H. A. Hanigan, 22d Infantry.

Conference No. 14:

Signal Corps Bibliography, by Captain Harry B. Kirtland, Signal Corps, Ohio National Guard,

“Open Circuit-Closed Circuit Repeaters,” by First Lieutenant G. R. Guild, Signal Corps.

“Notes on the Operation of Inductively Coupled Receiving Sets in Wireless Telegraphy,” by First Lieutenant J. O. Mauborgne, 3d Infantry.

#### AERONAUTICS

The third annual visit to Fort Omaha by the student officers of The Army Signal School took place May 23d to 27th, inclusive. As usual, it was difficult to find weather conditions which were suitable for ballooning, ● but complete investigations of the plant and reports thereon made the visit a very interesting and fruitful one. Signal Corps Dirigible No. 11 (capacity 35,000 cubic feet) made an ascension on the evening” of May 24th, with Captain C. DeF. Chandler, Signal Corps, as pilot, and Captains Janda and Michel, Lieutenants Mygatt and Fravel as passengers, all of this year’s signal class. A voyage of 35 miles, lasting 55 minutes, was made most successfully. It was too late in the day to attempt photography, for which preparation had been made, but the, wireless telegraph receiving set which was carried received messages with great clearness and regularity from the wireless station at Fort Omaha throughout the trip.

Signal Corps Balloon No. 12 (capacity 19,000 cubic feet) was inflated on the evening of the 25th, and was used as a captive’ balloon in connection with

the gasoline winch-wagon. A number of officers were taken up, but the adverse conditions of the weather prevented very successful operation of the balloon in this way.

There is no doubt visits' such as this are worth many days of theoretical instruction in aeronautics. In actually laying out and inflating the balloon, and taking part in ascensions officers can gain experience which would enable them in an emergency to handle balloons if called upon to do so.

As long as Fort Leavenworth has no facilities for such instruction the visits to Fort Omaha should be repeated each year.,

#### WIRELESS STATION

This was completed in June, 1910, but no regular use was made of the station until within the past year.

The station has been astonishingly efficient for one of such small power, namely, 3-kilowatt.' It has, under favorable conditions, worked successfully with the Key West, Florida, Naval Station, (1100 miles distant) and with the portable  $2\frac{1}{2}$ -kilowatt wagon set on the Mexican border at Eagle Pass, Texas (800 miles distant) . The station receives practically everything that is sent at night, from the New England coast to Colon, Panama.

Communication with Forts Riley and Omaha, where similar stations have been erected by the Signal . Corps, is practically as regular as if telegraph lines extended to these places.

Aside from its use as a military extension of telegraphic facilities, it has afforded a most valuable source of instruction in this important branch of telegraph engineering for the officers of the Signal School.

CONCLUSION

In addition to the acknowledgment of the excellent services of instructors, it is but fair that mention should be made of the clerical and enlisted technical staff of the School. Especially from January until June a very heavy load is thrown upon these assistants, and they have done their work so cheerfully, without regard to hours, it is but fair that due acknowledgment be made.

Very respectfully,

E. RUSSEL,  
*Major, Signal Corps,*  
*Assistant Commandant.*

## [APPENDIX]

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### List of lectures given during the year

1910

- September X—Opening Address to The Army Signal School, by Major Russel.
- September 28—Lecture on Optics, by Major Russel.
- November 7—Lecture on Swoope's Practical Electricity, by Major Russel.
- November 17—Lecture on Swoope's Practical Electricity and I. C. S. Pamphlets, by Major Russel.
- December 1 --Lecture on Swoope's Practical Electricity, by Major Russel.
- December 9—Lecture on Swoope's Practical Electricity, by Major Russel.
- December 21—Lecture on Swoope's Practical Electricity, by Major Russel.

1911

- January 5 -Lecture on Swoope's Practical Electricity, by Major Russel.
- January 17—Lecture on Swoope's Practical Electricity, by Major Russel.
- February 23—Lecture on Static Electricity, by Major Russel.
- February 23—Lecture on Submarine Cables, by Major Russel.
- March 15—Lecture on Buzzers and Other Apparatus for Induction Telegraphy, by Major Russel.
- March 23—Lecture on Direct Current Dynamos and Motors, by Major Russel.
- April 24 Lecture on Alternating Current Apparatus, by Major Russel.
- May 1 - Lecture on Wireless Telegraphy, by Major Russel.
- May 12—Lecture on Fire Control Communications for Coast Artillery, by Major C. McK. Saltzman, Signal Corps.
- May 13—Lecture on Maintenance, by Major C. McK. Saltzman, Signal Corps.
- May 25—Lecture on Aeronautics and Instruments Used in Connection with Free Balloon Flights, delivered at Fort Omaha, Nebraska, by Captain C. DeF. Chandler, Signal Corps.

## DEPARTMENT OF SIGNAL ENGINEERING

### REPORTS OF LABORATORY WORK

As soon as the observations required in an experiment have been completed and the results computed, a report should be written, describing in detail the work that has been done. This report should be sufficiently clear and complete to enable it to be understood by any person having a good general knowledge of the subject, even though the particular experiment described is entirely unfamiliar to him. Each report should therefore contain the following:

(1) A statement of the object of the experiment and an explanation of the means employed to accomplish this object. (Note: If this has been done in the problem itself, it need not be repeated.)

(2) A brief description of any apparatus which is being used for the first time.

(3) A diagram of connections. (Note to (1) will also apply to (3).)

(4) One of the objects of these reports is to make it clear to the instructor that the principles involved are fully understood. The student will find, also, that there is no better way of making a subject perfectly clear to himself than by presenting it in such a form as to be readily intelligible to some one else. Each step or detail of a demonstration should therefore be very clearly explained. Originality in the methods of proof is desirable, but of course may not be practicable in every case.

(5) The report should contain *all the original data*, and an indication of the numerical work by which the results are obtained. It is not necessary to include all the computations in the report, although where this can be done systematically and neatly, it is an advantage. In case a number of similar results are obtained by substitution in a formula, the numerical work should be given in detail in at least one case.

(6) When possible the results should be compared with those of previous experiments.

(7) When graphical methods are used in connection with an experiment, the curves obtained should be included in the report. In such cases the scale by which the co-ordinates

have been measured should be clearly indicated on the drawing itself.

(8) In writing reports, it should always be borne in mind that one important benefit which practice in this work may accomplish is the acquirement of clearness and facility of expression in the description of technical work. The arrangement and wording of each report should therefore be carefully considered with this object in view.

DEPARTMENT OF LANGUAGES  
THE ARMY SIGNAL SCHOOL  
FORT LEAVENWORTH, KANSAS

June 25, 1911.

THE SECRETARY,  
*The Army Signal School.*

SIR:

I have the honor to submit the following report of the work of this department, Army Signal School, 1910-11:

Time allotted, 64 half-days- began September 1, ended December 16, 1910.

Number of conferences, 64; length of conference per student, 2 hours.

Number of officers instructed, 10; number of sections, 1.

Instructor, Major D. E. Aultman, Field Artillery.

Course, elementary. See printed list of lessons.

Text books: *A Course in Spanish*, by the Department; *El Castellano Actual*, by Roman y Salamero.

At the beginning of the course, ten members of the Signal School were deemed insufficiently fluent in Spanish to take up German, French or advanced Spanish. Three officers, graduates of the School of the Line, 1910, and members of the Signal School, 1910-11, took courses in advanced Spanish, French and German respectively, with sections of the Staff Class. Each of these officers is included in the report of the Staff Class.

The instructor, Major Aultman, performed his work in a highly satisfactory manner. He has peculiar fitness for instruction in Spanish.

For the coming year, a change in text books is

expected to provide a more satisfactory course for this class in Spanish.

The text book on grammar just completed is not well adapted for use by other than advanced students. 'None of these students was advanced; several had no aptitude for the language.

The work of the class was faithful and zealous and all attained proficiency in the rudiments. No conversational fluency nor accuracy was accomplished. Progress was as satisfactory as could have been expected.

Respectfully,

THOMAS G. HANSON,

*Major, Infantry,*

*Senior Instructor.*

